Amendments to the Claims

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 – 26. (cancelled)

27. (previously presented) A light emitting device calibration system for calibrating a light emitting device in an optical disc drive, the light emitting device calibration system comprising:

a laser diode installed within the optical disc drive being the light emitting device to be calibrated;

a microprocessor electrically coupled to the light emitting device for controlling power of the light emitting device by changing values of a drive signal, receiving a power indication signal corresponding to light emitted by the light emitting device, and determining a power relationship relating values of the drive signal to powers of the light emitting device according to the power indication signal for each of the values of the drive signal during a calibration mode;

a light detector for detecting the light emitted by the light emitting device to generate an analog signal being directly proportional to the light emitted by the light emitting device;

a signal calibration circuit having a predetermined reference voltage being coupled between the light detector and the microprocessor for generating the power indication signal having an inverse relationship with the analog signal such that when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches at a predetermined maximum value, which is a function of the predetermined reference voltage;

and

a non-volatile memory for storing the power relationship determined by the microprocessor during the calibration mode, wherein the microprocessor uses said power relationship to control values of the drive signal according to desired powers of the light emitting device during a normal operation.

28. (previously presented) The light emitting device calibration system of claim 27, wherein during the calibration mode, the microprocessor adjusts a value of the drive signal so that the light emitting device does not emit any light, calculates a gain of the light emitting device calibration system by measuring a sampled maximum value of the power indication signal as detected by the microprocessor corresponding to the predetermined maximum value of the power indication signal, and correct the power indication signals as measured by the microprocessor for each of the plurality of values of the drive signal according to the obtained gain.

29. (previously presented) The light emitting device calibration system of claim 28, wherein during the calibration mode, when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches at a predetermined maximum value, which is substantially equal to two times of the predetermined reference voltage.

30. (previously presented) The light emitting device calibration system of claim 29, wherein the signal calibration circuit comprises:

an operational amplifier having an inverting terminal, a non-inverting terminal, and an output terminal, wherein the output terminal is for outputting the power indication signal;

a voltage reference source being the predetermined voltage value coupled to the non-inverting terminal;

a first resistor having a first end coupled to the analog signal outputted by the power meter, and a second end coupled to the inverting terminal; and

a second resistor having a first end coupled to the inverting terminal, and a second end coupled to the output terminal.

31. (previously presented) The light emitting device calibration system of claim 29, wherein during the calibration mode, the gain is calculated by the microprocessor as substantially equal to two times of the predetermined voltage value divided by the sampled maximum value of the power indication signal, which is detected by the microprocessor.

32. (currently amended) The light emitting device calibration system of claim 29, wherein during the calibration mode, the microprocessor is further to correct sampled power indication signal values, which are measured by the microprocessor, and a corrected power indication value is substantially equal to the gain multiplied by a sampled power indication signal value and then subtracted from two times the predetermined voltage value ~~that two times of the predetermined voltage value subtract of the value, which is obtained from the gain multiplying with a sampled power indication signal value~~.

33. (previously presented) The light emitting device calibration system of claim 28, wherein power indication signal is a digital signal.

34. (previously presented) The light emitting device calibration system of claim 33, wherein the power indication signal complies with a transmission standard, and the microprocessor includes a digital interface complying with the transmission standard.

35. (previously presented) The light emitting device calibration system of claim 34, wherein the transmission standard is RS-232 or USB.

36. (previously presented) The light emitting device calibration system of claim 28, wherein the non-volatile memory is a EEPROM or a FLASH.

37. (previously presented) The light emitting device calibration system of claim 28, wherein the light detector is a power meter having a photo sensor for receiving the light emitted by the light emitting device, and the power meter outputs the analog signal corresponding to an intensity of the light received at the photo sensor.

38. (previously presented) A method of calibrating a light emitting device in an optical disc drive, the method comprising:

providing a laser diode installed within the optical disc drive being the light emitting device to be calibrated;

controlling power of the light emitting device by changing values of a drive signal to the light emitting device during a calibration mode;

receiving a power indication signal corresponding to light emitted by the light emitting device;

determining a power relationship relating values of the drive signal to powers of the light emitting device according to the power indication signal for each of the values of the drive signal;

detecting the light emitted by the light emitting device to generate an analog signal being directly proportional to the light emitted by the light emitting device;

providing a predetermined reference voltage;

generating the power indication signal having an inverse relationship with the analog signal such that when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches at a

predetermined maximum value, which is a function of the predetermined reference voltage; and

storing the power relationship determined during the calibration mode for controlling values of the drive signal according to desired powers of the light emitting device in a normal operation mode.

39. (currently amended) The method of claim 38, further comprising:

adjusting a value of the drive signal [[till]] <u>until</u> the light emitting device does not emit any light;

calculating a gain of the light emitting device calibration system by measuring a sampled maximum value of the power indication signal as detected corresponding to the predetermined maximum value of the power indication signal; and

utilizing the gain to correct the power indication signals for each of the values of the drive signal.

40. (previously presented) The method of claim 39, wherein when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches a predetermined maximum value, which is substantially equal to two times of the predetermined reference voltage.

41. (previously presented) The method of claim 40, further comprising providing a signal calibration circuit for generating the power indication signal, wherein the signal calibration circuit comprises an operational amplifier having an inverting terminal, a non-inverting terminal, and an output terminal; a voltage reference source being the predetermined voltage value coupled to the non-inverting terminal; a first resistor having a first end coupled to the analog signal outputted by the power meter, and a second end coupled to the inverting terminal; and a second resistor having a first

end coupled to the inverting terminal, and a second end coupled to the output terminal.

42. (previously presented) The method of claim 40, further comprising calculating the gain being substantially equal to two times of the predetermined voltage value divided by the sampled maximum value of the power indication signal.

43. (previously presented) The method of claim 40, further comprising correcting sampled power indication signal values to generate corrected values being substantially equal to that two times of the predetermined voltage value subtracts the gain multiplying with a sampled power indication signal value.

44. (previously presented) The method of claim 39, wherein power indication signal is a digital signal.

45. (previously presented) The method of claim 44, wherein the power indication signal complies with a transmission standard.

46. (previously presented) The method of claim 45, wherein the transmission standard is RS-232 or USB.

47. (previously presented) The method of claim 39, further comprising storing the power relationship in a EEPROM or a FLASH.

48. (previously presented) The method of claim 39, providing a power meter having a photo sensor for receiving the light emitted by the light emitting device and outputting the analog signal corresponding to an intensity of the light received at the photo sensor.

49. (previously presented) A light emitting device calibration system for calibrating a light emitting device in an optical disc drive, the light emitting device calibration system comprising:

a laser diode installed within the optical disc drive being the light emitting device to be calibrated;

a microprocessor electrically coupled to the light emitting device for controlling power of the light emitting device by changing values of a drive signal, receiving a power indication signal corresponding to light emitted by the light emitting device, and determining a power relationship relating values of the drive signal to powers of the light emitting device according to the power indication signal for each of the values of the drive signal during a calibration mode;

a light detector for detecting the light emitted by the light emitting device to generate an analog signal;

a signal calibration circuit having a predetermined reference voltage for generating the power indication signal according to the analog signal and the predetermined reference voltage; and

a non-volatile memory for storing the power relationship determined by the microprocessor during the calibration mode, wherein the microprocessor uses said power relationship to control values of the drive signal according to desired powers of the light emitting device during a normal operation.

50. (previously presented) The light emitting device calibration system of claim 49, wherein during the calibration mode, the microprocessor adjusts a value of the drive signal so that the light emitting device does not emit any light, calculates a gain of the light emitting device calibration system by measuring a sampled maximum value of the power indication signal as detected by the microprocessor

corresponding to the predetermined maximum value of the power indication signal, and correct the power indication signals as measured by the microprocessor for each of the plurality of values of the drive signal according to the obtained gain.

51. (previously presented) The light emitting device calibration system of claim 50, wherein during the calibration mode, when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches at a predetermined maximum value, which is substantially equal to two times of the predetermined reference voltage.

52. (previously presented) The light emitting device calibration system of claim 51, wherein the signal calibration circuit comprises:

an operational amplifier having an inverting terminal, a non-inverting terminal, and an output terminal, wherein the output terminal is for outputting the power indication signal;

a voltage reference source being the predetermined voltage value coupled to the non-inverting terminal;

a first resistor having a first end coupled to the analog signal outputted by the power meter, and a second end coupled to the inverting terminal; and

a second resistor having a first end coupled to the inverting terminal, and a second end coupled to the output terminal.

53. (previously presented) The light emitting device calibration system of claim 51, wherein during the calibration mode, the gain is calculated by the microprocessor as substantially equal to two times of the predetermined voltage value divided by the sampled maximum value of the power indication signal, which is detected by the microprocessor.

54. (currently amended) The light emitting device calibration system of claim 51, wherein during the calibration mode, the microprocessor is further to correct sampled power indication signal values, which are measured by the microprocessor, and a corrected power indication value is substantially equal to the gain multiplied by a sampled power indication signal value and then subtracted from two times the predetermined voltage value ~~that two times of the predetermined voltage value subtract of the value, which is obtained from the gain multiplying with a sampled power indication signal value~~.

55. (previously presented) The light emitting device calibration system of claim 50, wherein power indication signal is a digital signal.

56. (previously presented) The light emitting device calibration system of claim 55, wherein the power indication signal complies with a transmission standard, and the microprocessor includes a digital interface complying with the transmission standard.

57. (previously presented) The light emitting device calibration system of claim 55, wherein the transmission standard is RS-232 or USB.

58. (previously presented) The light emitting device calibration system of claim 50, wherein the non-volatile memory is a EEPROM or a FLASH.

59. (previously presented) The light emitting device calibration system of claim 50, wherein the light detector is a power meter having a photo sensor for receiving the light emitted by the light emitting device, and the power meter outputs the analog signal corresponding to an intensity of the light received at the photo sensor.

60. (previously presented) A method of calibrating a light emitting device in an optical disc drive, the method comprising:

providing a laser diode installed within the optical disc drive being the light emitting device to be calibrated;

controlling power of the light emitting device by changing values of a drive signal to the light emitting device during a calibration mode;

receiving a power indication signal corresponding to light emitted by the light emitting device;

determining a power relationship relating values of the drive signal to powers of the light emitting device according to the power indication signal for each of the values of the drive signal;

detecting the light emitted by the light emitting device to generate an analog signal;

providing a predetermined reference voltage;

generating the power indication signal according to the analog signal and the predetermined reference voltage; and

storing the power relationship determined during the calibration mode in a non-volatile memory for controlling values of the drive signal according to desired powers of the light emitting device in a normal operation mode.

61. (currently amended) The method of claim 60, further comprising:

adjusting a value of the drive signal [[till]] <u>until</u> the light emitting device does not emit any light;

calculating a gain of the light emitting device calibration system by measuring a sampled maximum value of the power indication signal as detected corresponding to the predetermined maximum value of the power indication signal; and

utilizing the gain to correct the power indication signals for each of the values of the drive signal.

62. (previously presented) The method of claim 61, wherein when the analog signal is at the state of no light was emitted by the light emitting device, the power indication signal reaches a predetermined maximum value, which is substantially equal to two times of the predetermined reference voltage.

63. (previously presented) The method of claim 62, further comprising providing a signal calibration circuit for generating the power indication signal, wherein the signal calibration circuit comprises an operational amplifier having an inverting terminal, a non-inverting terminal, and an output terminal; a voltage reference source being the predetermined voltage value coupled to the non-inverting terminal; a first resistor having a first end coupled to the analog signal, and a second end coupled to the inverting terminal; and a second resistor having a first end coupled to the inverting terminal, and a second end coupled to the output terminal.

64. (previously presented) The method of claim 62, further comprising calculating the gain being substantially equal to two times of the predetermined voltage value divided by the sampled maximum value of the power indication signal.

65. (previously presented) The method of claim 62, further comprising correcting sampled power indication signal values to generate corrected values being substantially equal to that two times of the predetermined voltage value subtracts the gain multiplying with a sampled power indication signal value.

66. (previously presented) The method of claim 61, wherein power indication signal is a digital signal.

67. (previously presented) The method of claim 66, wherein the power indication signal

complies with a transmission standard.

68. (previously presented) The method of claim 67, wherein the transmission standard is RS-232 or USB.

69. (previously presented) The method of claim 61, further comprising storing the power relationship in a EEPROM or a FLASH.

70. (previously presented) The method of claim 61, providing a power meter having a photo sensor for receiving the light emitted by the light emitting device and outputting the analog signal corresponding to an intensity of the light received at the photo sensor.